JS9/13/21
RJA 2/17/22

SAT Report for Case # P-18-0324

General

[redacted]

Report Status: Complete **Status Date:** 11/16/2018

CRSS Date: 10/09/2018 **SAT Date:** 10/10/2018 **SAT Chair:** William Irwin

Consolidated PMN? N

Consolidated Set:

Submitter: [redacted]

CAS Number: [redacted]

Ecotox Related Cases:

Health Related Cases: [redacted]

Chemical Name: [redacted]

Use: Resin/binder in paint formulations for industrial and architectural applications.

Si-OMe [redacted]

Trade name: [redacted]

PV Max (kg/yr): [redacted]

Ecotox Assessor: Nguyen, Amelia **Fate Assessor:** Lynch, David **Health Assessor:** Salazar, Keith

Physical Chemical Information

Molecular Weight:	[redacted]	**Physical State - Neat:**	Solid (est.)		
Percent 500:	[redacted]	**Percent 1000:**	[redacted]		
Melting Point (Measured):		**Melting Point (est):**		**MPD (EPI):**	
Vapor Pressure:		**Vapor Pressure (est):**	<0.000001	**VP (EPI):**	
Water Solubility:		**Water Solubility (EST):**	Reacts	**Water Solubility (EPI):**	
Log Kow:				**Log Kow (EPI):**	
Log P:		**Log P Comment:**			

SAT Concern

Ecotox Rating (1):	1	**Ecotox Rating Comment (1):**	
Ecotox Rating (2):		**Ecotox Rating Comment (2):**	
Health Rating (1):	2	**Health Rating Comment (1):**	
Health Rating (2):		**Health Rating Comment (2):**	

PBT Ratings

Persistence	Bioaccumulation	Toxicity	Comments
1	1	2	PMN
3	1	1	Hyd Pdt

Exposure Based Review (Health)?	Y
Exposure Based Review (Ecotox)?	Y
SAT	IRR-E, S, MM, L; Neuro;
Keywords:	Lung

Fate Assessment Summary:	P-18-0324 FATE: MW = [redacted] with [redacted] < 500 and [redacted] < 1000 Solid S = Reacts Hydrolysis half-life = min-hr VP < 1.0E-6 torr at 25 °C (E) BP > 400 °C (E) H < 1.00E-8 (E) POTW removal (%) = PMN 90-99 via hydrolysis; then Hyd Pdt 90 via sorption Time for complete ultimate aerobic biodeg = Hyd Pdt > mo Sorption to soils/sediments = Hyd Pdt v.strong PBT Potential: PMN P1B1; Hyd Pdt P3B1 FATE: Migration to ground water = Hyd Pdt negl
Removal in WWT/POTW (Overall):	90-99;90 PMN;Hyd Pdt

Condition	Rating Values w/ Rating Description	Comment
WWT/POTW Sorption:	;3	PMN;Hyd Pdt
WWT/POTW Stripping:	;4	PMN;Hyd Pdt
Biodegradation Removal:	;4	PMN;Hyd Pdt
Biodegradation Destruction:		

Condition	Rating Values w/ Rating Description	Comment
Aerobic Biodeg Ult:	;4	PMN;Hyd Pdt
Aerobic Biodeg Prim:		
Anaerobic Biodeg Ult:	;4	PMN;Hyd Pdt
Anaerobic Biodeg Prim:		
Hydrolysis (t1/2 at pH 7,25C) A:	1-2	[redacted]
Hydrolysis (t1/2 at pH 7,25C) B:		
Sorption to Soils/Sediments:	;1	PMN;Hyd Pdt
Migration to Ground Water:	;1	PMN;Hyd Pdt
Photolysis A, Direct:		
Photolysis B, Indirect:		
Atmospheric Ox A, OH:		
Atmospheric Ox B, O3:		

Health Assessment

Health Summary: Absorption is expected to be NIL for the parent polymer and NIL to poor for the low molecular weight fraction with reaction all routes, based on physical/chemical properties. The absorption of the methanol reaction product is expected to be good all routes. There is concern for lung waterproofing and irritation to the eye, skin, mucous membranes, and lung, based on the reaction of alkoxysilanes. There is concern for neurotoxicity and developmental toxicity by methanol release.

Routes of Exposure: Dermal , Oral, Inhalation

Test Data Submitted

Test Data Submitted: Methanol
IRIS RfD = 2 mg/kg/day
Methanol IRIS RfC = 20 mg/m3

	Analog data for [redacted] Salmonella assay negative with and without activation; Not an eye irritant in female rabbits; Rat (F) acute (15D) oral (gavage) toxicity LD50 > 2000 mg/kg; Not a demal sensitizer in female mice; Not a dermal irritant in female rabbits Analog data for [redacted]: Salmonella assay negative with and without activation; Negative for chromosome aberrations in CHO cells with and without activation; Not an eye irritant in female rabbits;

Ecotox Assessment

Test organism	Test Type	Test Endpoint	Predicted	Measured	Comments
Fish	96-h	LC50	*		
Daphnid	48-h	LC50	*		
Green Algae	96-h	EC50	*		
Fish	-	Chronic Value	*		
Daphnid	-	Chronic Value	*		
Green Algae	-	Chronic Value	*		

Factors	Most Sensitive Endpoint	Assessment Factor	CoC	Comment
Acute Acquatic:	*	5		* = No effects at saturation for fish, daphnid, and green algae. Because hazards are not expected up to the water solubility limit, acute concentration of concern was not identified.
Chronic Acquatic:	*	10		* = No effects at saturation for fish, daphnid, and green algae. Because hazards are not expected up to the water solubility limit, chronic concentration of concern was not identified.

Ecotox Route of Exposure?	No releases to water

Factors	Values	Comments
SARs:	Nonionic Polymers	
SAR Class:	Nonionic polymers-alkoxysilanes	
TSCA NCC Category?	Alkoxysilanes	

Recommended Testing
N/A

Ecotox Value Comments
Toxicity
values are based on SAR predictions for nonionic polymers and physical chemical properties of P-18-0324 (MW [redacted] with [redacted] <500 and [redacted] <1000; solid (est.) with an unknown MP (P); S = negligible (P), reacts (M)); effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150 mg/L as CaCO3; and TOC <2.0 mg/L.

Ecotox Factors Comments

Environmental Hazard: Environmental hazard is relevant to whether a new chemical substance is likely to present unreasonable risk because the significance of the risk is dependent upon both the hazard (or toxicity) of the chemical substance and the extent of exposure to the substance. EPA estimated environmental hazard of this new chemical substance using predictions based on SAR predictions for nonionic polymers and physical chemical properties of P-18-0324 (MW [redacted] with [redacted] <500 and [redacted] <1000; solid (est.) with an unknown MP (P); S = negligible (P), reacts (M)). This substance falls within the TSCA New Chemicals Category of Alkoxysilanes. Acute and chronic toxicity values estimated for fish, aquatic invertebrates, and algae are all no effects at saturation. These toxicity values indicate that the new chemical substance is expected to have low environmental hazard. Because hazards are not expected up to the water solubility limit, acute and chronic concentrations of concern are not identified.

Environmental Risk: Risks to the environment from acute and chronic exposure are not expected at any concentration of the PMN substance soluble in water (i.e., no effects at saturation).